here so reduced in size as to be quite invisible from above, and only demonstrable with difficulty from below, whence it appears in ordinary positions under the microscope as a convex ovoidal or heartshaped plate; it, moreover, looks downwards and slightly backwards. instead of upwards and backwards or directly backwards, as it usually does.

The legs are long, slender, simple, equal in length, rather more than twice as long as the body (including the rostrum), and are composed of eight joints, terminated by a weak slightly curved claw. Their three basal joints are as broad as long, equal, and almost globular; the fourth is club-shaped at the distal end; the fifth is all but as long as the fourth, and, with the remaining joints, perfectly filiform; the sixth is shorter and about twice the length of the two last together; these are subequal.

							illims
Length	of the	body (including the rostrum)					13
,,	,,	legs					26
,,	,,	second pair of cephalic appendages					10
"	,,	third ,, ,, ,,					12

From the linear form of the body and the slenderness of the legs I conclude that my specimen is a male—a conclusion by no means invalidated by the presence of the third pair of cephalic appendages, which, being apparently invariably developed in both sexes throughout several genera (Nymphon, &c.), consequently possesses no value in the determination of questions of sex.

Hab. Dredged by the writer at Port Blair, Andaman Islands, in 25 fathoms of water, at which depth the bottom was clothed with a dense tangle of delicate filamentous algae so closely resembling the animal in point of colour and form that the latter was with difficulty

distinguishable.

In conclusion, I dedicate the first species of Pycnogonida hitherto discovered in these seas to the memory of the illustrious Danish naturalist whose name is so indissolubly connected with the history both of the Pycnogonida and of the lower Crustacea.—Journal of the Asiatic Society of Bengal, vol. xlii. part 2 (1873).

On the Development of Distomum nodulosum. By O. von Linston.

The author has ascertained that Distomum nodulosum is not produced from the Cercaria Planorbis carinati as supposed by De Filippi,

but from another form which was not previously known.

To follow the migrations of this worm the author put individuals full of ova into a vase containing freshwater mollusca (Lymneus, Paludina, Planorbis, Valvata, &c.). The Distoma were soon decomposed and their ova were set free. The first embryos were hatched in two or three days; they swam about rapidly by means of their vibratile covering. It was in the alimentary canal of certain Chætopod Annelids by which they had been swallowed that M. von Linstow was best able to follow the first transformations of these larvæ; they had lost their eilia, and there was clearly to be

distinguished an auterior protuberance, which was already visible in the embryo when free in the water. The examination of the mollusca did not furnish conclusive results. Most of the individuals contained Cercariæ: but these belonged to several species: so that it was impossible to make out which of them were derived from Distomum nodulosum. However, by far the most abundant form in Paludina impura was a species furnished with an aculeus, and resembling D, nodulosum in the form and dimensions of its suckingdisks. This Cercaria is developed in sporocysts, completely destitute of structure, but often presenting a protuberance resembling that seen in the larvæ which penetrated into the interior of the Annelids. The sporocysts increase by transverse division; they never contain more than a few Cercariæ, and sometimes only a single one. In the Paluding these Cercaria become encysted, losing their tails and at the same time their aculeus, which the author saw detach itself. Specimens of Paludina impura are found containing only sporocysts and free Cereariæ, others which contain only encysted Cereariæ, and others, again, with all three forms.

The author administered the cysts to four small perch. These fishes were opened two hours afterwards; and in two of them M. von Linstow discovered a certain number of young Distoma which proved to be D. nodulosum. These experiments therefore seem to prove that the ova of these Trematoda fall into the water, from which the embryos pass into Mollusca, from which they reach the fishes without

penetrating into an intermediate host.

A curious fact observed in this species is its presence under a different form in Acerina cernua. The author has found on the outer surface of the intestine of this fish delicate cysts which, when ruptured, gave issue to young specimens of D. nodulosum, presenting all the characters of the species. Some of them already possessed the vitellogene and the germinogene, the testes and the cirrus-sac. He has also found the same cysts with the same contents, together with free young D. nodulosa in the same state of development, in the intestine of Perca fluviatilis, which they had evidently reached with an individual of Acerina cernua. The walls of the cysts are much more delicate than those occurring in Paludina impura; the cysts are also much larger, measuring 0.4 millim. or more instead of 0.07 millim; moreover the animal contained in them is much further advanced in development.

The author explains in the following manner the presence of the parasite under these exceptional circumstances. There must be two modes of transport of the Cercariae into fishes. In the first case the fish eats a Paludina containing encysted Cercariae; the Cercariae are set free by the digestion of the cysts and attain their sexual state in the intestine of the fish. In the second case the Acerina cernua eats a mollusk containing free Cercariae, or else these larvae pass directly into the fish. They pierce the intestine by means of their aculeus and encyst themselves on the outside of the wall of that organ. During their course through the intestine they increase in size, because

they find suitable nourishment there.

Leuckart has laid down the principle that only the encysted Distoma

are transferable. M. von Linstow thinks that this opinion is correct if we understand thereby that a state of encystation is always necessary before a Distomum can be developed freely in the intestine. If a free Cercaria reaches its definitive host, it may continue to live there, but it becomes encysted.—Archiv für Naturg. 1873, p. 1; Bibl. Univ. August 15, 1873, Bull. Sci. p. 328.

Manufactured Glassrope. By Dr. J. E. Gray, F.R.S. &c.

There have lately been sold at a natural-history sale two or three specimens of the glassrope (Hyadonema) from Japan of an extraordinary thickness, made up of a very large number of siliceous fibrous spicules, which at the free end diverge in the most extraordinary manner into a bunch six or seven inches wide. The size, and especially the fibres being separated from each other and twisted in different directions, so that the spiral turns did not match each other, excited my suspicions, which were confirmed by the mass of black pitchy matter with which their base was covered.

The larger specimen was made to appear the most perfect, and was about four inches in circumference about three inches from the base. This part, above the black pitchy substance, is covered with the usual bark for about two or three inches height. When this animal coat or so-called bark was carefully examined, it was found to have no real connexion with the spicules, and to be made up of pieces of bark taken from other specimens and fixed across the bunch of filaments, the grooves between the pieces looking like wrinkles. These specimens are evidently made for sale, probably by the same French taxidermist that made the specimens formerly noticed.

I am sorry to say they found purchasers at prices which the separate glassy filaments of which they are composed would not have fetched. The larger specimens have a usual-sized specimen, partly denuded of its bark, attached by a black pitchy substance to its base,

Note on certain Species of Phasmidæ hitherto referred to the Genus Bacillus. By James Wood-Mason, of Queen's College, Oxford.

The discovery which I have to announce, viz. that the true males of Bacillus insignis and its allies are to be sought in insects of the type of Lonchodes stilpnus, Westw., Lonchodes Beudoporus, Westw., Lonchodes Russellii, Bates, &c., affords another instructive illustration not only of the extreme imperfection of our knowledge of this family of Orthopterous insects, but also of the utter futility of any attempt satisfactorily to distribute the species composing it into genera, until we shall be in possession of the true pairs of many more of the described species.

In 1869 M. Henri de Saussure* proposed, prematurely as it turns out, to divide the genus Bacillus into three subgenera—one (Bacillus) for the reception of B. Rossii and its allies, another (Ramulus) for B. humilis, Westw., B. carinulatus, Sauss., &c., and a third (Baculum) for B. cunicularis, Westw., B. ramosus, Sauss., &c.; and in the first part of my memoir on the Phasmide †, 1 provisionally referred to

^{*} Mél. Orth. fasc. ii. pp. 111 & 112. † Journ. A. S. B. 1873, pt. ii. no. 1.